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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
SHEINBERG, MONIKA B	
ART UNIT	**PAPER NUMBER**
1634	

DATE MAILED: 04/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/992,028	FIRMAN, KEITH	
	Examiner	Art Unit	
	Monika B Sheinberg	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 December 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) *1 and 16-28* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-15 and 29-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-32* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: *Detailed Action*.

DETAILED ACTION

Response to Amendment filed December 23, 2003

1. Applicants' arguments, file: 23 December 2003, have been fully considered but they are not deemed to be persuasive. Reasons for withdrawing rejection are set forth in the response to arguments. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.

2. The amendments to the claims and the addition of new claims 29-32 are acknowledged.

3. Claims 1-32 are pending.

4. Claims 1 and 16-28 remain withdrawn.

5. Claims 2-15 and 29-32 have been hereby examined.

Restriction/Election

6. Applicants request for reconsideration of the restriction has been acknowledged. The restriction requirement has been reconsidered yet is still deemed proper and is therefore made FINAL.

MAINTAINED REJECTIONS

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 2-15 and 29 are rejected under 35 U.S.C. 102(a) as being anticipated by Janscak *et al.* (*Nuc. Acids Res.*, 1-Oct-1998; *PTO-1449*)(referred to as **D1** in the instant applicant's response). The rejection of claims 2-15 is maintained and reiterated for reasons of record.

Janscak *et al.* demonstrates restriction-modification systems (claims 2 and 12) of linear DNA-protein complexes; wherein bound to the DNA is a Type IC HsdR subunit (claims 4 and 13) and a DNA methyltransferase (Mtase) subunit (HsdM and HsdS; claim 13), in a stoichiometry of $HsdR_1M_2S_1$ (claims 4 and 14) (abstract and p. 4442, Figure 3). The $HsdR_1M_2S_1$ –DNA complex is demonstrated to not cleave its bound DNA while still retaining ATPase activity (claims 2, 6 and 15) and translocation capability. The Mtase is the second bound substance (claim 2, step 2) that can bind to a substance in solution (claim 7) for interaction with the environment of the system (i.e. gel retardation assay, Figure 1, p. 4441) to produce a detectable and measurable effect (claim 11). The gel itself is a solid support (claims 8, 9 and 12) to which the DNA/enzyme complex is attached (newly added claim 29).

9. Please note that due to Applicants arguments to the rejections are collectively discussed the Response to Arguments is at the end of the instant prior art rejections in section numbers 13-18 below.

10. Claims 2, 3, 7-12 and 29-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Yin *et al.* (*Science,* 1995, *PTO-1449*)(referred to as **D2** in the instant applicant's response). The rejection of claims 2, 3 and 7-12 is maintained and reiterated for reasons of record and newly applied to claims 29 and 30.

Yin *et al.* demonstrates an RNA polymerase-DNA complex as a molecular motor translocating a nucleic acid that has a bead bound to the opposite end, while attached to a cover glass surface (claims 2 and 12) in solution (claim 7) (p. 1654, 1st column, 2nd paragraph). (See also Figure 1, p. 1654). The RNA polymerase, a mecanoenzyme, is bound to one end of the linear DNA (claim 3) without cleaving it (claims 2 and 12); while a bead is attached at the opposite end (claim 2, step 2). The bead is "tethered to the surface by its connection through the DNA and the polymerase" (p. 1654, 1st column, 2nd paragraph) thereby a direct means of attachment to the nucleic acid/enzyme complex as required by claim 10. The glass cover slip is a solid support (claims 8 and 12) to which the DNA/enzyme complex is attached opposite the bead (claim 9) such that it sets a "stationary reference frame"(p. 1654, 2nd column, 2nd paragraph) so that the distance translocated by the bead can be measured. The bead is a bound substance

capable of movement and detected visually by the Brownian motion in light microscopy (claim 11). The means of attachment of the nucleic acid/enzyme complex to the solid support as required by claim 29 is direct: the polymerase of the nucleic acid/enzyme complex is directly attached to the glass cover slip, the solid support, while the bound substance (the bead) are indirectly attached to the solid support in that it is attached to the DNA which is bound to the polymerase (enzyme) bound to the glass cover slip [see Figure 1]. The bead is the bound substance required to be translocated (claim 30).

11. Claims 2-4, 6-13, 15 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Janscak *et al.* (*J. Mol. Biol.*, 1996; *PTO-1449*)(referred to as **D3** in the instant applicant's response). The rejection of claims 2-4, 6-13 and 15 is maintained and reiterated for reasons of record and newly applied to claim 29.

Janscak *et al.* teaches a DNA-protein complex comprising a type IC restriction-modification enzyme and exhibits the stoichiometric form $HsdR_1M_2S_1$ when bound to the second substance, methyltransferase (M_2S_1) (bridging paragraph of pp. 979-980). As per the MPEP 2112, Janscak *et al.* anticipates the molecular motor system of the instant claims being that the composition of the molecular motor system is identical to the instant composition of the claims thus inherently has identical properties.

> The claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. In re Best, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). See also MPEP § 2112.01.
> [2112.01]
> Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 562 F.2d at 1255, 195 USPQ at 433. See also Titanium Metals Corp. v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (Claims were directed to a titanium alloy containing 0.2-0.4% Mo and 0.6-0.9% Ni having corrosion resistance. A Russian article disclosed a titanium alloy containing 0.25% Mo and 0.75% Ni but was silent as to corrosion resistance. The Federal Circuit held that the claim was anticipated because the percentages of Mo and Ni were squarely within the claimed ranges. The court went on to say that it was immaterial what properties the alloys had or who discovered the properties because the composition is the same and thus must necessarily exhibit the properties.).

12. Claims 2-15 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Mernagh *et al.* (*Biol. Chem.*, April-1998; *PTO-1449*)(referred to as **D4** in the instant applicant's response). The rejection of claims 2-15 is maintained and reiterated for reasons of record.

Mernagh *et al.* teaches a DNA-protein complex comprising a type IC restriction-modification enzyme and exhibits the stoichiometric form $HsdR_1M_2S_1$. As per the MPEP 2112.01 (see above), Mernagh *et al.* anticipates the molecular motor system of the instant claims being that the composition of the molecular motor system is identical to the instant composition of the claims thus inherently has identical properties.

Response to Arguments

13. Applicant, Firman, points to being an author of references D1, D3 and D4 without the declaration of being the sole inventor as seen in the instant application of the invention claimed. With regards to reference D1, please note that of 35 U.S.C. 102 (a) states "by others" to which the reference D1 is an invention by others, not solely by Firman who is the sole inventor of the instant application. With regards to references D3 and D4 and the 35 U.S.C. 102 (b) rejections, it is irrelevant whether Firman is a co-author due to the statutory bar for one to disclose is one year regardless of who the inventors are.

14. On page 15, 2nd–3rd paragraph of the response: Applicant asserts that the D3 reference "inaccurately reports the stoichiometry of the Type IC R-M enzymes studied. [...] Also, the predicted stoichiometry of $HsdR_1M_2S_1$ on page 980 of D3 was suggested for the native enzyme, which is known to cleave DNA." This argument was found to persuasive only for those claims directed specifically to the stoichiometry of $HsdR_1M_2S_1$. After further review, along with Applicant's explanation, Examiner agrees that the D3 reference speaks of the stoichiometric species to be the native and cleavage-active species of the enzyme now known to be instead $HsdR_2M_2S_1$ while the $HsdR_1M_2S_1$ species is the intermediary species that lacks the ability to cleave (see ref. D4 as pointed to by Applicant). As such claims 5 and 14, directed to the specific to the DNA/enzyme complex having a stoichiometric form $HsdR_1M_2S_1$ are withdrawn from the

instant rejection. However, the remaining claims under the instant rejection do not require a specific composition make-up of the DNA/enzyme complex as seen in claims 2-3, 6-12 and 15; and claims 4 and 13 only require that the complex comprise of the HsdR, HsdS and HsdM subunits. In addition, the action of translocation occurs with either stoichiometric form without cleavage when for example two of such binding sites occur on the DNA, it is demonstrated by reference D3 that cleavage only occur once the translocation has brought the two of such bound enzymes together enabling cleavage (p. 982, 2nd column, 1st paragraph). [See also D1-Jansack et al, 1998: "DNA is cleaved at positions where the DNA translocation stops either due to a collision of two translocating enzyme molecules on two-site, linear DNA substrates, or due to the build-up of topological strain on circular molecules"(p. 4439, 2nd column, 1st paragraph)].

15. On page 15, 4th paragraph of the response: Applicant asserts that

> There is no disclosure in D1, D3 or D4 of the isolated $R_1M_2S_1$ species. By "isolated" in the context is meant separated in a form which can be harnessed to do useful work as a molecular motor, rather than merely isolated for the purposes of identification and characterization.

The instant argument has been thoroughly reviewed but is not found to be persuasive because an intended use ('harnessed to do useful work') does not carry patentable weight. In addition, the specification as originally filed does not define the term "isolated" to be specifically only in the context as described above in the Applicants assertion, nor do the claims require the instant molecular motor system to be isolated.

16. In the bridging paragraph of pages 15-16 of the response: Applicants assert that the native enzyme falls outside of the scope of the present claims because "the native enzyme is now known to be an equilibrium mixture of the R_1- and R_2- species and, as such, will always be able to cleave DNA" (p. 16). This argument has been thoroughly reviewed but not found to be persuasive because D1 and D4 teach the $HsdR_1M_2S_1$ species to be isolated and thus outside of the native environment that would lead to such an equilibrium mixture thereby remain unable to cleave DNA.

17. On page 16, 2nd–3rd paragraph of the response: Applicants assert that the Examiner misinterpreted the teachings of D1 wherein a DNA/protein complex translocated plasmids into an unmodified host cell. In addition, Applicant asserts that none of references D1, D3 or D4 teach a bound substance that is translocated as a result of DNA translocation (other than the enzyme that is bound to create the DNA/enzyme complex). After further review of D1, Examiner agrees that the plasmid taught within the reference does not read on the second bound substance that is being translocated as required by the claims. Thus the statements directed to the 'bound substance' and the plasmid have been withdrawn from the rejection.

With respects to references not teaching a bound substance that is translocated as a result of DNA translocation, the argument has been thoroughly reviewed and not found persuasive. It is to be noted that the D1 rejection also points to a Mtase as being a second bound substance, therefore reference D1 remains demonstrative of a bound substance as required by step 2 of claim 2. With the DNA/enzyme complex inherently performing the task of translocating the DNA, the DNA bound Mtase would be translocated towards the proximal region by means of DNA translocation as required by the claims. Reference D4 also points to a methyltransferase as the second bound substance.

It is to be further noted that claims 12-15 do not require a bound substance, which is to be translocated. Claims 12-15 are directed to a DNA/protein complex that is bound to a solid support, wherein the DNA/protein complex exhibits the stoichiometric form $HsdR_1M_2S_1$ and maintains the property of translocation without cleaving the bound nucleic acid.

18. In the bridging paragraph of pages 16-17 of the response: Applicants assert that molecular motor system of D2 is different from the instant invention in that

> [T]he molecular motor system according to the claimed invention remains fixed to the nucleic acid at the (original) binding site [while in D2 the polymerase travels along the DNA]. When the motor is activated, the distal end of the nucleic acid is brought closer to the binding site, but there is no movement of the proximal end of the nucleic acid relative to the enzyme.

This argument has been thoroughly reviewed but not been found to be persuasive because limitations limiting the movement and 'fixing' the enzyme to the DNA in the DNA/enzyme complex are not limitations required by the claims therefore are not required to be taught by the prior art reference D2.

NEW REJECTIONS AS NECESSITATED BY AMENDMENT

Claim Rejections - 35 USC § 112

19. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

20. Claims 31 and 32 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 31 and 32 recites a limitation that requires the bound substance to be a "linker capable of being bound to a substance which is required to be translocated"(claim 31) or a "linker combined with the substance which is required to be translocated" (claim 32). Applicants have not pointed to support in the specification for the instant amendments to the claims. In addition, the specification as originally filed does not teach or suggest the bound substance of claim 10 to be a "linker" as presently claimed. It is to be noted however, support for a binding ligand such as biotin is present in the instant specification. As such claims 31 and 32 contain new matter.

21. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

22. Claims 2-15 and 29-32 are rejected as necessitated by amendment under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2-15 and 29-32 are vague and indefinite due to the lack of clarity of the claim language regarding the action translocation occurring without cleavage in claims 2, 12 and 15. The lack of clarity still remains in whether the cleavage is actually prohibited from occurring at

all to meet the limitations of the claims, or the action of cleavage merely cannot occur *during* translocation. If the latter is intended then an enzyme which translocates an nucleic acid sequence and cleaves *afterwards* would still fulfill the instant requirement of not cleaving during translocation. As currently written, it can be interpreted that the bound substance capable of translocating/ moving in a direction relative to the region where the translocating enzyme is bound, however does not necessarily reach the enzyme at which point the prior art states cleavage could occur. [Jansack et al, 1998: "DNA is cleaved at positions where the DNA translocation stops either due to a collision of two translocating enzyme molecules on two-site, linear DNA substrates, or due to the build-up of topological strain on circular molecules"(p. 4439, 2nd column, 1st paragraph)]. As such it is unclear what is intended to be encompassed by the claim. Claims 3-11, 13, 14 and 29-32 are also indefinite due to dependency from claims 2, 12 and 15.

Claims 10 and 30 (which depends from claim 10) are vague and indefinite due to the lack of clarity of the claim language "a substance which is required to be translocated..." (line 7 of the amended claim). It is unclear whether the indicated substance is intended to be the same 'bound substance' of claim 2, step 2, or yet another substance that can be the same or different than the bound substance of claim 2. Clarification is requested.

Claims 31 Is it actually bound to another substance or simply capable of binding without actually doing so...

Claims 31 and 32 are vague and indefinite due to the lack of clarity of the term "linker". It is unclear as to what are the metes and bounds of the parameters that define the term 'linker'.

Claim Rejections - 35 USC § 103

23. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

24. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

25. Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yin *et al.* (*Science,* 1995, *PTO-1449*)(referred to as **D2** in the instant applicant's response) in view of Huang *et al.* (*Anal. Biochem.*, 1996).

Yin *et al.* demonstrates an RNA polymerase-DNA complex as a molecular motor translocating a nucleic acid that has a bead bound to the opposite end, while attached to a cover glass surface in solution (p. 1654, 1st column, 2nd paragraph). (See also Figure 1, p. 1654). The RNA polymerase, a mecanoenzyme, is bound to one end of the linear DNA without cleaving it; while a bead is attached at the opposite end. The bead is "tethered to the surface by its connection through the DNA and the polymerase" (p. 1654, 1st column, 2nd paragraph) thereby a direct means of attachment to the nucleic acid/enzyme complex as required by claim 10. The glass cover slip is a solid support to which the DNA/enzyme complex is attached opposite the bead such that it sets a "stationary reference frame"(p. 1654, 2nd column, 2nd paragraph) so that the distance translocated by the bead can be measured. The bead is a bound substance capable of movement and detected visually by the Brownian motion in light microscopy. The means of attachment of the nucleic acid/enzyme complex to the solid support is direct: the polymerase of the nucleic acid/enzyme complex is directly attached to the glass cover slip, the solid support, while the bound substance (the bead) are indirectly attached to the solid support in that it is attached to the DNA which is bound to the polymerase (enzyme) bound to the glass cover slip [see Figure 1]. The bead is the bound substance required to be translocated.

Yin *et al.* does not specifically teach the means of attachment between the DNA and the bead (the bound substance) to be bound by a linker as required by claims 31 and 32.

Huang *et al.* teaches a method of binding double-stranded DNA molecules to streptavidin-coated beads (p. 116, 2nd column, 5th paragraph). The beads are polystyrene beads

(p. 116, 1st column, 2nd paragraph) which are coated with streptavidin. The streptavidin acts as the linker molecule, which binds to biotinylated-macromolecules (such as DNA). The link formed between biotin and streptavidin is taught to be very strong and therefore capable of being applied as a powerful linkage system between macromolecules and ligand interactions (p. 115, bridging paragraph between columns); the reference states: "the strong and specific binding feature of this biotin –streptavidin system not only offers many powerful bioanalytical applications but also generates considerable interest as a versatile model in studying macromolecule-ligand interactions." Therefore Huang *et al.* demonstrates a means of attaching a polystyrene bead to DNA by use of linker molecule (streptavidin) that is capable of binding to the bead (claim 31) and does bind to the bead thus in combination with the bead – the bound substance (claim 32).

Due to Yin *et al* not teaching the means of attaching the polystyrene bead to the DNA, it would have been *prima facia* obvious for one of ordinary skill in the art at the time the invention was made to use the molecule motor system taught by Yin *et al.* and modify the means of attaching the bead to the DNA to include streptavidin as a linker molecule on polystyrene beads to bind to biotinylated-DNA as per the teachings of Huang et al. One of ordinary skill in the art would have been motivated to perform the modifications because the biotin-streptavidin system of Huang *et al.* allows for the formation of a "practically irreversible" bond (p. 115, 1st column, 1st paragraph) that would allow for reliable and strong attachment of the polystyrene bead to the DNA of the molecular motor system of Yin *et al.*

Conclusion

MAINTAINED REJECTIONS

- The rejection of claims 2-15 is maintained and reiterated, and newly applied to claim 29, under 35 U.S.C. 102(a) as being anticipated by Janscak *et al.* (D1).
- The rejection of claims 2, 3 and 7-12 is maintained and reiterated, and newly applied to claims 29 and 30, under 35 U.S.C. 102(b) as being anticipated by Yin *et al.* (D2).
- Claims 2-4, 6-13, 15 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Janscak *et al.* (D3)

- The rejection of claims 2-15 is maintained and reiterated, and newly applied to claim 29, under 35 U.S.C. 102(a) as being anticipated by Mernagh *et al.* (D4).

NEW REJECTIONS

- Claims 31 and 32 are rejected under 35 U.S.C. 112, first paragraph – new matter.
- Claims 2-15 and 29-32 are rejected as necessitated by amendment under 35 U.S.C. 112, second paragraph.
- Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as unpantentable over Yin *et al.* (D2) in view of Huang *et al.*

No claim is allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Inquiries

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993) (See 37 CFR § 1.6(d)). The central **Fax number is (703) 872-9306.**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monika B. Sheinberg, whose telephone number is (571) 272-0749. The examiner can normally be reached on Monday-Friday from 9 A.M to 5 P.M. If attempts to reach the examiner by telephone are unsuccessful, the primary examiner in charge of the prosecution of this case, Jehanne Sitton, can be reached at

(571) 272-0752. If attempts to reach the examiners are unsuccessful, the examiner's supervisor, Gary Benzion, can be reached at (571) 272-0782.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Patent Analyst, Chantae Dessau, whose telephone number is (571) 272-0518, or to the Technical Center receptionist whose telephone number is (703) 308-0196.

April 27, 2004
Monika B. Sheinberg
Art Unit 1634

JEHANNE SITTON
PRIMARY EXAMINER
4/27/04